## California MLPA Master Plan Science Advisory Team Marine Mammals Evaluation Results for Round 1 External MPA Arrays: Draft Supplemental Information

March 13, 2010 Draft

The tables in this document provide supporting information for the Round 1 marine mammals evaluation results. Results are given for individual marine protected areas (MPAs) within north coast external proposed MPA arrays.

In Round 1 evaluations, effects on benefits to marine mammals by allowing tribal uses in an MPA were not considered because there was not enough information on tribal uses to determine what the effects might be; therefore, tribal uses were not considered in proposed state marine reserves (SMRs) and other MPAs that were evaluated as a no-take areas. In External Proposed MPA Array C, areas that allowed tribal uses only were assigned as state marine conservation areas (SMCAs) according to the proposed designation, whereas in other external proposed MPA arrays, areas that allowed tribal uses only were proposed as SMRs. Because tribal uses were not considered in this evaluation, we assigned SMCAs from External Proposed MPA Array C, which propose only tribal uses, to the SMR category for these analyses. In External Proposed MPA Array C, the proposed SMCAs that were reclassified as no-take MPAs equivalent to SMRs are: Pyramid Point SMCA, Reading Rock SMCA, Punta Gorda SMCA, Vizcaino SMCA, Ten Mile SMCA, Ten Mile Estuary SMCA, Point Cabrillo SMCA and Navarro River Estuary SMCA.

Additional mammal evaluations were not included in Round 1 because we are in the process of analyzing and evaluating the available data for those evaluations. We will update the pinniped rookery information and evaluate benefits to pinniped rookeries in Round 2 evaluations. The near-colony foraging analysis also will include Steller sea lion rookery locations in Round 2.

Note use of the following marine protected area and marine managed area acronyms in a number of tables:

SMR = state marine reserve

SMP = state marine park

SMCA = state marine conservation area

SMRMA = state marine recreational management area

Table 1: Comparison between external proposed MPA arrays of number of species and number and percentage (%) of animals within proposed marine protected areas. Only state marine reserves counted towards totals in Table 2.

MPA Name	California Sea Lion	California Sea Lion %	Steller Sea Lion	Steller Sea Lion %	Harbor Seal	Harbor Seal %
		Proposal 0				
Point Cabrillo SMCA	244	8.63%	41	0.81%	60	0.33%
MacKerricher SMCA	0	0.00%	0	0.00%	567	3.14%
ExA						
Crescent City Mobile SMCA	0	0.00%	8	0.12%	100	1.12%
Trinidad Mobile SMCA	0	0.00%	0	0.00%	18	0.20%
Humboldt Bay SMRMA	0	0.00%	0	0.00%	567	6.37%
Punta Gorda (FS) SMCA	519	3.81%	196	2.84%	241	2.71%
Shelter Cove Mobile SMCA	0	0.00%	0	0.00%	137	1.54%
Ten Mile (FS) SMR	0	0.00%	0	0.00%	316	3.55%
Noyo Mobile SMCA	0	0.00%	0	0.00%	47	0.53%
Point Cabrillo (FS) SMR	0	0.00%	0	0.00%	64	0.72%
Albion Mobile SMCA	0	0.00%	0	0.00%	83	0.93%
Point Arena Mobile SMCA	0	0.00%	0	0.00%	387	4.35%
		ExB				
Humboldt Bay SMRMA	0	0.00%	0	0.00%	567	6.37%
Punta Gorda SMR	93	0.68%	94	1.36%	241	2.71%
Ten Mile SMR	0	0.00%	0	0.00%	78	0.88%
Point Cabrillo SMR	0	0.00%	0	0.00%	64	0.72%
		ExC				
False Klamath Cove SMCA	337	2.48%	244	3.53%	99	1.11%
Humboldt Bay SMRMA	0	0.00%	0	0.00%	567	6.37%
Punta Gorda SMCA	829	6.09%	307	4.45%	385	4.32%
Vizcaino SMCA	482	3.54%	89	1.29%	128	1.44%
Ten Mile SMCA	0	0.00%	0	0.00%	316	3.55%
MacKerricher SMCA	0	0.00%	0	0.00%	506	5.68%
Point Cabrillo SMCA	0	0.00%	0	0.00%	64	0.72%
Russian Gulch SMCA	0	0.00%	0	0.00%	14	0.16%
		ExD				
False Klamath SMCA	337	2.48%	244	3.53%	186	2.09%
Patrick's Point SMCA	664	4.88%	136	1.97%	191	2.15%
South Humboldt Bay SMCA	0	0.00%	0	0.00%	567	6.37%
Gorda SMR	519	3.81%	196	2.84%	241	2.71%
Big Flat SMCA	50	0.37%	2	0.03%	94	1.06%
Usal SMR	482	3.54%	89	1.29%	128	1.44%

MPA Name	California Sea Lion	California Sea Lion %	Steller Sea Lion	Steller Sea Lion %	Harbor Seal	Harbor Seal %
MacKerricher SMCA	0	0.00%	0	0.00%	506	5.68%
Point Cabrillo SMR	576	4.23%	41	0.59%	103	1.16%
		ExE				
False Klamath SMCA	337	2.48%	244	3.53%	217	2.44%
South Humboldt Bay SMRMA	0	0.00%	0	0.00%	567	6.37%
False Cape SMCA	332	2.44%	6	0.09%	80	0.90%
Punta Gorda SMR	829	6.09%	307	4.45%	564	6.34%
Vizcaino SMCA	540	3.97%	89	1.29%	128	1.44%
S.E.A. Ten Mile SMR	0	0.00%	0	0.00%	316	3.55%
MacKerricher SMCA	0	0.00%	0	0.00%	506	5.68%
Point Cabrillo SMR	0	0.00%	0	0.00%	64	0.72%
Russian Gulch SMCA	0	0.00%	0	0.00%	14	0.16%
		ExF				
Humboldt Bay SMRMA	0	0.00%	0	0.00%	567	6.37%
Punta Gorda SMR	93	0.68%	94	1.36%	241	2.71%
Ten Mile SMR	0	0.00%	0	0.00%	78	0.88%
MacKerricher SMCA	0	0.00%	0	0.00%	506	5.68%
Point Cabrillo SMR	0	0.00%	0	0.00%	64	0.72%
		ExG				
Humboldt Bay SMRMA	0	0.00%	0	0.00%	567	6.37%
Punta Gorda SMR	93	0.68%	94	1.36%	241	2.71%
Ten Mile SMR	0	0.00%	0	0.00%	78	0.88%
Point Cabrillo SMR	0	0.00%	0	0.00%	64	0.72%
		ExH				
Humboldt Bay SMRMA	0	0.00%	0	0.00%	567	6.37%
Punta Gorda SMR	93	0.68%	94	1.36%	241	2.71%
Ten Mile SMR	0	0.00%	0	0.00%	78	0.88%
Point Cabrillo SMR	0	0.00%	0	0.00%	64	0.72%

Table 2. Comparison between external proposed MPA arrays of number of species and number of animals at haulouts within proposed state marine reserves and total number of pininpeds within the north coast study region.

	No. of Species	California Sea Lion	Steller Sea Lion	Harbor Seal	Total Number of Animals	Percent of Study Region Population
P0	0	0	0	0	0	0.00%
ExA	3	0	0	380	380	1.29%
ExB	3	93	94	383	570	1.94%
ExC	3	1,311	396	893	2,600	8.84%
ExD	3	1,577	326	472	2,375	8.07%
ExE	3	829	307	944	2,080	7.07%
ExF	3	93	94	383	570	1.94%
ExG	3	93	94	383	570	1.94%
ExH	3	93	94	383	570	1.94%
Study Region						
Total	3	13,608	6,905	8,902	29,415	100%

Figure 1. Comparison by external proposed MPA array of percent pinniped population captured in proposed state marine reserves.

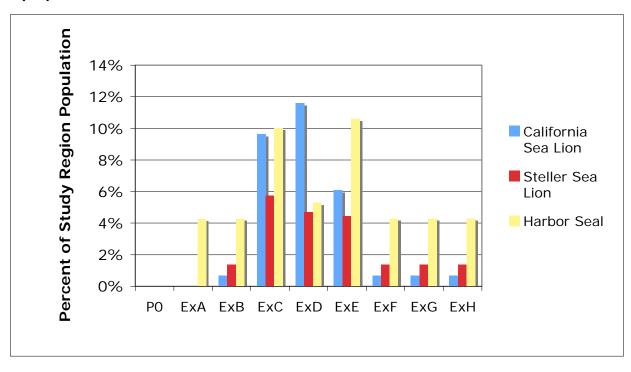


Table 3. Comparison between external proposed MPA arrays of the harbor seal foraging index within proposed state marine reserves.

MPA Proposal	MPA Name	Weighted Forage Area	Sum of weighted area in SMRs	
Proposal 0	Punta Gorda SMR	0.090	0.090	
-	Navarro River Estuary SMR	0.002		
<b>Γ</b> Λ	Point Cabrillo (FS) SMR	0.010	0.72	
ExA	Ten Mile (FS) SMR	0.714	0.73	
	Ten Mile Estuary SMR	0.002		
	Navarro River Estuary SMR	0.003		
	Point Cabrillo SMR	0.008		
ExB	Punta Gorda SMR	0.963	1.39	
EXD	Pyramid Point SMR	0.046	1.39	
	Ten Mile Estuary SMR	0.002		
	Ten Mile SMR	0.369		
	Navarro River Estuary SMCA	0.002		
	Point Cabrillo SMCA	0.094		
	Punta Gorda SMCA	1.052		
ExC	Pyramid Point SMCA	0.046	2.06	
	Ten Mile Estuary SMCA	0.002		
	Ten Mile SMCA	0.724		
	Vizcaino SMCA	0.140		
	Gorda SMR	1.127		
	Navarro River Estuary SMR	0.002		
ExD	Point Cabrillo SMR	0.259	2.09	
LXD	Pyramid Point SMR	0.045	2.09	
	Ten Mile River Estuary SMR	0.002		
	Usal SMR	0.654		
	Point Cabrillo SMR	0.104		
	Punta Gorda SMR	1.282		
ExE	Pyramid Point SMR	0.045	2.21	
	S.E.A. Ten Mile Estuary SMR	0.002		
	S.E.A. Ten Mile SMR	0.782		
	Navarro River Estuary SMR	0.003		
	Point Cabrillo SMR	0.008	1.39	
ExF	Punta Gorda SMR	0.958		
LΛΙ	Pyramid Point SMR	0.045	1.37	
	Ten Mile Estuary SMR	0.002		
	Ten Mile SMR	0.369		
ExG	Navarro River Estuary SMR	0.003	1.38	

MPA Proposal	MPA Name	Weighted Forage Area	Sum of weighted area in SMRs
	Point Cabrillo SMR	0.008	
	Punta Gorda SMR	0.958	
	Pyramid Point SMR	0.045	
	Ten Mile Estuary SMR	0.002	
	Ten Mile SMR	0.369	
	Point Cabrillo SMR	0.008	
	Punta Gorda SMR	0.958	
ExH	Pyramid Point SMR	0.035	1.37
	Ten Mile Estuary SMR	0.002	
	Ten Mile SMR	0.369	

Figure 2. Comparison between external proposed MPA arrays of the harbor seal foraging index within proposed state marine reserves in the north coast study region.

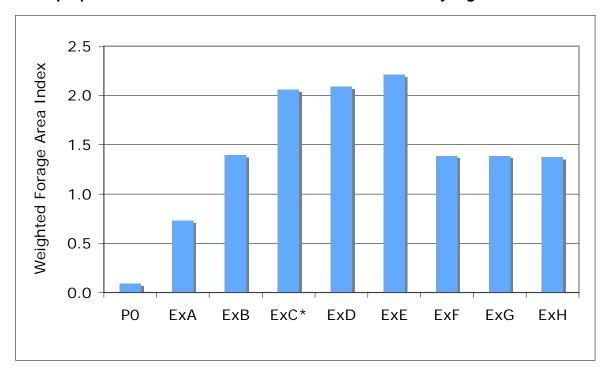


Table 4. Comparison between external proposed MPA arrays of gray whale foraging index within proposed marine protected areas and proposed state marine reserves.

External MPA Array	MPA Name	Whales Weighted Forage Index	Sum of weighted index in SMRs
Proposal 0	None	0.00	0
	Crescent City Mobile SMCA	1.01	
ExA	Crescent City Mobile SMCA	4.87	0
	Trinidad Mobile SMCA	5.22	
ExB	None	0.00	0
ExC	False Klamath Cove SMCA	2.87	0
F.D.	False Klamath SMCA	4.45	0
ExD	Patrick's Point SMCA	4.16	0
ExE	False Klamath SMCA	5.70	0
ExF	None	0.00	0
ExG	None	0.00	0
ExH	None	0.00	0

Table 5. Comparison between external proposed MPA arrays of inclusion of top six marine mammal population hot spots in proposed marine protected areas in the north coast study region.

	SW Seal Rock	Sugarloaf Island	Vicinity of Castle Rock, Crescent City	South Bay, Humboldt Bay	Arcata Bay, Humboldt Bay	Mouth of Eel River
P0						
ExA				Humboldt Bay SMRMA		
ExB				Humboldt Bay SMRMA		
ExC				Humboldt Bay SMRMA		
ExD				South Humboldt Bay SMCA		
ExE				South Humboldt Bay SMRMA		
ExF				Humboldt Bay SMRMA		
ExG				Humboldt Bay SMRMA		
ExH				Humboldt Bay SMRMA		